IN THE CLAIMS

CLAIM 1 – 20 (Cancel)

CLAIM 21 (Previously Presented) A method for writing to a memory storage device comprising:

a) providing a storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof; and

b) heating an element of said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell;

c) said heating said element is provided by passing an electric current therethrough.

CLAIM 22 (Previously Presented) A method according to 21, wherein said storage cell comprises a magnetic tunnel junction.

CLAIM 23 (Previously Presented) A method according to the claim 21, wherein said changeable magnetic region is a reversible magnetic region having a magnetization state which can be reversed by applying thereto a selected magnetic field, said reversible magnetic region comprising a material having a magnetization state that is responsive to a change in the temperature thereof.

CLAIM 24 (Previously Presented) A method according to claim 23, wherein said storage cell further comprises at least one fixed magnetic region having a magnetization state which does not reverse when said selected magnetic field is applied thereto.

CLAIM 25 (Cancel)

CLAIM 26 (Previously Presented) A method according to claim 21, further comprising providing an electrically conductive terminal capable of receiving the electric current passing through said heating element.

CLAIM 27 (Previously Presented) A method according to claim 21, wherein said material having a magnetization state that is responsive to a change in temperature thereof comprises a ferrimagnetic material.

CLAIM 28 (Previously Presented) A method according to claim 27, further comprising maintaining said changeable magnetic region at a compensation temperature of said material to maintain stored data in said storage cell.

CLAIM 29 (Previously Presented) A method for writing to a memory storage device comprising:

a) providing a storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof; and

b) heating an element responsive to an external energy source and proximate to said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell[[.]] ;

c) said heating said element is provided by passing an electric current through said element.

CLAIM 30 (Previously Presented) A method for writing to a memory storage device comprising a memory array comprising two or more memory storage devices, said method comprising:

a) providing a storage cell having a bit line and word line associated therewith, said storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof; and

b) heating an element proximate to said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell;

c) said heating said element is provided by passing an electric current through said element

CLAIM 31 (Previously Presented) A method according to claim 30, wherein said storage cell comprises a magnetic tunnel junction.

CLAIM 32 (Previously Presented) A method according to 30, wherein said changeable magnetic region is a reversible magnetic region having a magnetization state which can be reversed by applying thereto a selected magnetic field, said reversible magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof.

CLAIM 33 (Previously Presented) A method according to claim 32, further comprising providing at least one fixed magnetic region having a magnetization state which does not reverse when said selected magnetic field is applied thereto.

CLAIM 34 (Cancel)

CLAIM 35 (Previously Presented) A method according to claim 30, wherein at least one of said two or more of said memory storage devices further comprises an electrically conductive terminal capable of receiving the electric current passing through said heating

element.

CLAIM 36 (Previously Presented) A method according to 30, wherein said passing said electric current through said heating element is for a predetermined time period, wherein said time period is sufficiently short so as to prevent reversal of a magnetization state of one or more storage cells adjacent to the selected storage cell.

CLAIM 37 (Previously Presented) A method according to claim 30, wherein said material having a magnetization state that is responsive to a change in temperature thereof comprises a ferrimagnetic material.

CLAIM 38 (Previously Presented) A method according to claim 30, wherein said changeable magnetic region is maintained at a compensation temperature of said material to maintain stored data in said storage cell.

CLAIM 39 (Previously Presented) A method for writing to a memory storage device on an integrated circuit comprising at least one memory storage device, said method comprising:

a) providing a storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof; and

b) heating an element proximate to said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell.

CLAIM 40 (Previously Presented) A method according to claim 39, wherein said at least one memory storage device further comprises an electrically conductive terminal capable of receiving an electric current passing through said heating element.

CLAIM 41 (Previously Presented) A method of writing to a magnetic memory element of an array of magnetic memory elements, the method of comprising: heating the memory element wherein the memory element is heated by passing a current through a conductor; and applying at least one magnetic field to the memory element.

CLAIM 42 (Previously Presented) The method of claim 41, wherein the heat and at least one magnetic field are applied to the memory element simultaneously.

CLAIM 43 (Previously Presented) The method of claim 41, wherein heat is applied and removed before at least one magnetic field is applied to the memory element.

CLAIM 44 (Previously Presented) The method of claim 41, wherein the heating raises the temperature of the memory element by about 5 C^0 to 10 C^0 above a compensation temperature.

CLAIM 45 (Previously Presented) The method of claim 41, wherein the heating raises the temperature of the memory element.

CLAIM 46 (Previously Presented) The method of claim 41, wherein a junction is heated by passing said current through a conductor.

CLAIM 47 (Previously Presented) The method of claim 41, wherein first and second orthogonal fields are applied to the memory element.

CLAIM 48 (Previously Presented) An information storage device comprising: an array of magnetic memory elements; and a plurality of heating elements for said array of magnetic memory elements, said heating elements are included with said magnetic memory elements extending across the array.

CLAIM 49 (Previously Presented) The information storage device of claim 48, wherein the heating elements are conductors.

CLAIM 50 (Cancel)

CLAIM 51 (Previously Presented) The information storage device of claim 48, wherein each heating element includes conductors providing the heating elements.

CLAIM 52 (Previously Presented) The information storage device of claim 48, wherein the heating lines extend diagonally across the array.

CLAIM 53 (Previously Presented) The information storage device of claim 48, wherein the heating elements raise the temperature of selected memory elements by about 5 C^0 to 10 C^0 above a compensation temperature.

CLAIM 54 (Previously Presented) The information storage device of claim 48, wherein the heating elements raise the temperature of selected memory elements.

CLAIM 55 (Previously Presented) The information storage device of claim 48, further comprising first means for generating magnetic fields for switching selected memory elements; and second means for causing the heating elements to apply heat to the selected memory elements while the magnetic fields are being applied.

CLAIM 56 (Previously Presented) The information storage device of claim 48, further comprising first means for generating magnetic fields for switching selected memory elements; and second means for causing the heating elements to apply heat to the selected memory elements before the magnetic fields are applied.

CLAIM 57 (Previously Presented) An information storage device comprising: an array of magnetic memory elements; and means for performing thermally-assisted switching of selected memory elements in the array said means comprises heating elements included in the devices extending across the array.

CLAIM 58 (Previously Presented) The method of claim 41, wherein the junction is

heated by passing a current through a conductor that is spaced apart from the junction.

CLAIM 59 (Currently Amended) The method of claim [[41]] 57, wherein first and second orthogonal fields are applied to the memory element.

CLAIM 60 (Previously Presented) The device of claim 48, wherein the heating elements are spaced apart from the memory elements.